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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,891	01/15/2004	Gianpiero Santacatterina	IT20020057	4773

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EXAMINER	
NORTON, JENNIFER L	
ART UNIT	**PAPER NUMBER**
2121	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/757,891	SANTACATTERINA ET AL.	
	Examiner	Art Unit	
	Jennifer L. Norton	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a **Final Office Action** in response to the Amendment received on January 19, 2006. Claims 10-14 have been added, claims 1-14 are pending in this application.

Claim Objections

2. The amendment to claims 1 and 3-10 was received on January 19, 2006. The correction is acceptable.

Claim Rejections - 35 USC § 102

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 4, 6-7, 9 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,572,438 (hereinafter Ehlers).

4. As per claim 1, Ehlers discloses a process for managing total power demand absorbed of one or more appliances, the process comprising the steps of:

assessing for each appliance an energy consumption profile (Fig. 4, element 48) of the one or more appliances corresponding to its setting (col. 3, lines 61-67, col. 5, lines 45-49, col. 10, lines 17-20 and 25-31, col. 11, lines 30-32 and 53-59, col. 12, lines 21-59, col. 13, lines 64-67 and col. 14, lines 1-14);

summing the energy consumption profiles to determine if their sum leads to one or more peaks in power demand (col. 2, lines 58-65, and col. 3, lines 1-3 and 36-48, col. 5, lines 45-49, col. 13, lines 46-63, col. 14, lines 60-67, col. 15, lines 1-11, col. 23, lines 32-34 and col. 30, lines 5-8); and

providing one or more new energy consumption profiles to the one or more appliances for leveling the total power absorbed by the one or more appliances (col. 3, lines 36-48 and col. 25, lines 9-31).

5. As per claim 2, Ehlers discloses the appliances are controlled through on-off switching (col. 25, lines 9-16) and wherein the appliances are synchronized for organizing the on-off switching of single appliances or components in order to limit peaks of power demand (col. 2, lines 58-67, col. 3, lines 1-3 and 36-48 and col. 25, lines 19-31).

6. As per claim 4, Ehlers discloses at least one of the new energy consumption profiles is based on a delayed switching on one of the appliances or components thereof (col. 15, lines 39-46 and Fig. 4, element 34F).

7. As per claim 6, Ehlers discloses a system for managing and curtailing power absorbed of one or more appliances (col. 5, lines 45-49 and col. 8, lines 13-15 and col. 11, lines 30-32), each appliance having an user interface (Fig. 1, element 22)

connected to a control unit for setting working parameters of the appliance (col. 4, lines 50-53), wherein the control unit is adapted to assess, for each appliance, an energy consumption profile corresponding to its setting (col. 3, lines 61-67, col. 5, lines 45-49, col. 10, lines 17-20 and 25-31, col. 11, lines 53-59, col. 12, lines 21-59, col. 13, lines 64-67 and col. 14, lines 1-14), the control unit being adapted to sum the energy consumption profiles in order to check if their sum leads to one or more peaks in the power demand and to provide one or more new energy consumption profiles in order to level or reduce the total power absorbed by the one or more appliances or components thereof (col. 2, lines 58-65, and col. 3, lines 1-3 and 36-48, col. 5, lines 45-49, col. 13, lines 46-63, col. 14, lines 60-67, col. 15, lines 1-11, col. 23, lines 32-34 and col. 30, lines 5-8).

8. As per claim 7, Ehlers discloses appliances controlled through on-off switching further comprises a control circuit (col. 25, lines 9-16) adapted to synchronize the appliances for organizing the on-off switching of single appliances in order to limit peaks of energy demand (col. 2, lines 58-67, col. 3, lines 1-3 and 36-48 and col. 25, lines 19-31, col. 30, lines 5-8).

9. As per claim 9, Ehlers discloses the control unit is adapted to provide one or more new energy consumption profiles based on a delayed switching on one of the appliances or components thereof (col. 15, lines 39-46 and Fig. 4, element 34F).

10. As per claim 11, Ehlers discloses leveling the total power absorbed comprises reducing the magnitude of the peaks of the total power absorbed (col. 30, lines 5-8).

11. As per claim 12, Ehlers discloses leveling the total power absorbed comprises maintaining the summed energy consumption at approximately an average energy consumption. (col. 29, lines 57-67 and col. 30, lines 1-13).

12. As per claim 13, Ehlers discloses reducing the total power absorbed by the one or more appliances or components comprises reducing the magnitude of the peaks of the total power absorbed (col. 30, lines 5-8).

13. As per claim 14, Ehlers discloses reducing the total power absorbed by the one or more appliances or components comprises maintaining the summed energy consumption at approximately an average energy consumption (col. 29, lines 57-67 and col. 30, lines 1-13).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlers in view of U.S. Patent No. 4,612,619 (hereinafter Culp).

16. As per claim 3, Ehlers does not expressly teach the process wherein each on-off switching is based on a duty cycle and wherein a synchronizer puts in a sequence all the different duty cycles starting from the one related to the load with a higher power level, then organizes them inside a selected period of control, each duty cycle being placed in a precise position inside the period of control to avoid unnecessary simultaneous activation of loads.

Culp teaches to a process for leveling energy consumption of loads being controlled (Fig. 1, element 10) by a duty cycle routine, the loads having on and off times within a predetermined period of time for a plurality of loads (abstract). The load first turned off during the upcoming period or interval is the load having the largest off time kilowatt rating. The next load to be turned off is the load with the smallest off time kilowatt rating. The next load to be turned off is the load having the next largest off time kilowatt rating, the next load to be turned off is the load having the next smallest off time kilowatt rating, and so on. The times between T1 and T2, T3 and T4, T5 and T6 and so on ending with the time between TN and the end of the period, are

the gap times between corresponding adjacent off times. The gap times are substantially equal and are spread uniformly through the period (Fig. 3, col. 3, lines 4-16).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Ehlers to include a process wherein a synchronizer is adapted to put in a sequence all the different duty cycles starting from the one related to the load with higher power level, and is adapted to organize them inside the selected period of control, each duty cycle being placed in a precise position inside the period of control. It is desirable, during a load cycling routine, to spread the off times uniformly throughout the period to minimize the energy consumption at any given instant in time during the interval. Thus, it is not desirable to have all of the loads on at a given instant of time (col. 1, lines 56-61).

17. As per claim 8, Ehlers does not expressly teach the system wherein each on-off switching is based on a duty cycle and wherein a synchronizer is adapted to put in a sequence all the different duty cycles starting from the one related to the load with a higher power level, and it-is-adapted-to organize them inside the selected period of control, each duty cycle being placed in a precise position inside the period of control to avoid unnecessary simultaneous activation of loads.

Culp teaches to a system for leveling energy consumption of loads being controlled (Fig. 1, element 10) by a duty cycle routine, the loads having on and off times within a predetermined period of time for a plurality of loads (abstract). The load first turned off during the upcoming period or interval is the load having the largest off time kilowatt rating. The next load to be turned off is the load with the smallest off time kilowatt rating. The next load to be turned off is the load having the next largest off time kilowatt rating, the next load to be turned off is the load having the next smallest off time kilowatt rating, and so on. The times between T1 and T2, T3 and T4, T5 and T6 and so on ending with the time between TN and the end of the period, are the gap times between corresponding adjacent off times. The gap times are substantially equal and are spread uniformly through the period (Fig. 3, col. 3, lines 4-16).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Ehlers to include a synchronizer that is adapted to put in a sequence all the different duty cycles starting from the one related to the load with higher power level, and is adapted to organize them inside the selected period of control, each duty cycle being placed in a precise position inside the period of control. It is desirable, during a load cycling routine, to spread the off times uniformly throughout the period to minimize the energy

consumption at any given instant in time during the interval. Thus, it is not desirable to have all of the loads on at a given instant of time (col. 1, lines 56-61).

18. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlers in further in view of U.S Patent No.: 6,519,509 (referred to as Nierlich hereinafter).

19. As per claim 5, Ehlers does not expressly teach the basis of the new leveled energy consumption profiles, a signal related to future energy consumption profiles is provided, such signal being adapted to be used by a control unit which supervises more appliances and/or a utility company in order to have a forecast for future total energy consumption on the mains.

Nierlich teaches to a process of future energy consumption profiles (Fig. 3, element 48) that includes a level of kilowatt reduction (col. 8, lines 35-45), provides incremental and aggregate load forecast data over a prescribed period (Fig. 3, element 50) and is fully compatible with other electronic devices and software such as devices and software that graphically illustrate variables using histograms and plots and/or perform statistical analysis (col. 8, lines 46-52).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Ehlers to include a process on the basis of the new leveled energy consumption profiles, a signal related to future energy consumption profiles is provided, such signal being adapted to be used by a control unit which supervises more appliances and/or a utility company in order to have a forecast for future total energy consumption on the mains; which is useful for anticipating demand peaks and curtailment scheduling (col. 8, lines 52-53).

20. As per claim 10, Ehlers does not expressly teach the control unit is adapted to provide, on the basis of the new leveled energy consumption profiles, a signal related to future energy consumption profiles, such signal being adapted to be used by a control unit supervising more appliances and/or a utility company in order to have a forecast for future total energy consumption on the mains.

Nierlich teaches to the future energy consumption profiles (Fig. 3, element 48) that includes a level of kilowatt reduction (col. 8, lines 35-45), provides incremental and aggregate load forecast data over a prescribed period (Fig. 3, element 50) and is fully compatible with other electronic devices and software such as devices and software that graphically illustrate variables using histograms and plots and/or perform statistical analysis (col. 8, lines 46-52).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Ehlers to include a control unit adapted to provide, on the basis of the new leveled energy consumption profiles, a signal related to future energy consumption profiles, such signal being adapted to be used by a control unit supervising more appliances and/or a utility company in order to have a forecast for future total energy consumption on the mains; which is useful for anticipating demand peaks and curtailment scheduling (col. 8, lines 52-53).

Response to Arguments

21. Applicant's arguments, see Remarks pgs. 5-9, filed January 19, 2006 with respect to the rejection(s) of claims 1-2, 4, 6-7 and 9 under 35 U.S.C. 102(b) have been fully considered but they are not persuasive.

With respect to claims 1-2 and 4, the Ehlers reference discloses an energy consumption profile (col. 3, lines 61-67, col. 5, lines 45-49, col. 10, lines 17-20 and 25-31, col. 11, lines 30-32 and 53-59, col. 12, lines 21-59, col. 13, lines 64-67 and col. 14, lines 1-14), summing the energy consumption profiles of the appliances of the appliances to determine if their sum leads to one or more peaks in power demand (col. 2, lines 58-65, and col. 3, lines 1-3 and 36-48, col. 5, lines 45-49, col. 13, lines 46-63, col. 14, lines 60-67, col. 15, lines 1-11, col. 23, lines 32-34 and col. 30, lines 5-8), and

providing new energy consumption profiles to the appliances for leveling the total power absorbed by the appliances (col. 3, lines 36-48 and col. 25, lines 9-31).

The Ehlers reference discloses both access an energy consumption profile setting (col. 3, lines 61-67, col. 5, lines 45-49, col. 10, lines 17-20 and 25-31, col. 11, lines 30-32 and 53-59, col. 12, lines 21-59, col. 13, lines 64-67, col. 14, lines 1-14 and Fig. 4, element 48) and sum of the energy consumption profiles (col. 2, lines 58-65, and col. 3, lines 1-3 and 36-48, col. 5, lines 45-49, col. 13, lines 46-63, col. 14, lines 60-67, col. 15, lines 1-11, col. 23, lines 32-34 and col. 30, lines 5-8) is indicated to monitor loads (col. 5, lines 45-49) and reduce peaks through load shedding (col. 30, lines 5-8 and which in inherent of the definition of load shedding, see Asian Electronics Ltd. Glossary).

The Ehlers reference discloses energy consumption profiles are accumulated (i.e. summed, which is a synonym of accumulated according to the Ehlers reference, col. 13, lines 46-63 and the Merriam Webster's Dictionary of Synonyms, pg. 13).

With respect to claims 6-7 and 9, the Ehlers reference discloses assessing for each appliance an energy consumption profile (col. 3, lines 61-67, col. 5, lines 45-49, col. 10, lines 17-20 and 25-31, col. 11, lines 30-32 and 53-59, col. 12, lines 21-59, col. 13, lines 64-67, col. 14, lines 1-14 and Fig. 4, element 48), summing the energy

consumption profiles of the appliance to determine if their sum leads to one or more peaks in power demand (col. 2, lines 58-65, and col. 3, lines 1-3 and 36-48, col. 5, lines 45-49, col. 13, lines 46-63, col. 14, lines 60-67, col. 15, lines 1-11, col. 23, lines 32-34 and col. 30, lines 5-8), and providing new energy consumption profiles to appliances for leveling the total power absorbed by the appliances (col. 3, lines 36-48 and col. 25, lines 9-31).

22. Applicant's arguments, see Remarks pgs. 9-14, filed January 19, 2006 with respect to the rejection(s) of claims 3, 5, 8 and 10 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive.

23. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

24. Applicant's is reminded that the prosecution of a patent application should be conducted with decorum. While the applicant may be unhappy with the rejection that was made, exception is taken with respect to the use of the phrase "cherry-picked". It would appear that the applicant is merely arguing that impressible hindsight has been used. The examiner disagrees.

With respect to claims 3 and 8, the motivation to combine Ehlers and Culp was indicated on pgs. 6 and 7-8 of the Non-Final Office Action mailed on October 19, 2005 with reference to Culp, col. 1, lines 56-61 states, "It is desirable, during a load cycling routine, to spread the off times uniformly throughout the period to minimize the energy consumption at any given instant in time during the interval. Thus, it is not desirable to have all of the loads on at a given instant of time." Hence the argument of impressible hindsight is improper.

With respect to claims 5 and 10, the motivation to combine Ehlers and Nierlich was indicated on pgs. 8-10 on the Non-Final Office Action mailed on October 19, 2005 with reference to Nierlich, col. 8, lines 52-53 states, "This feature is useful for anticipating demand peaks and curtailment scheduling." Hence the argument of impressible hindsight is improper.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art that relates to the definitions of load shedding and accumulate.

Asian Electronics Ltd. Glossary (www.Aelgroup.com/glossary.htm) discloses a definition of loading shedding as it relates to peak demand.

Merriam Webster's Dictionary of Synonyms discloses synonyms for the word accumulate as it relates to the word sum.

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer L. Norton whose telephone number is 571-272-3694. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571-272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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